DOCUMENT RESUME

ED 176 062 CE 022 153

TITLE	[New and Emerging Manpower Needs.] Occupational Information Compiled during the Project Entitled "Identification of Curriculum and Services Necessary to Train Students for Emerging Manpower Needs and Job Opportunities: A Model System.
INSTITUTION	Orange County Dept. of Education, Santa Ana, Calif.
PUB DATE	Jun 79
NOTE	37p.
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Employment Patterns; Employment Qualifications; *Employment Trends; Food Service Occupations; Job Analysis; *Job Skills; Leisure Time; Occupational Guidance; *Occupational Information; Occupational Surveys; *Occupations; Postsecondary Education; Safety; Secondary Education; Solar Radiation; Vocational Education
IDENTIFIERS	California (Orange County); *New and Emerging Occupations; Word Processing

ABSTRACT

As a part of a project that was to develop a system for defining vocational education curriculum and services necessary to train students for new and emerging manpower needs and job opportuntites, this report describes seven new and emerging occupations. The occupations included represent those which have met the project criteria for "new and emerging" and for which there is believed to be no complete curriculum at the secondary or postsecondary level. Occupations inlcuded are: (1) public safety assistant, (2) career guidance technician, (3) leisure counselor, (4) word processing/reprographics specialist, (5) word processing supervisor, (6) solar installer, and (7) fast food service unit supervisor. Each occupational description contains a raticnale for selecting the occupations, a job description, a list of competencies needed, a list of resources and acknowledgments, and a list of publications related to the occupation. (LRA)

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OCCUPATIONAL INFORMATION

compiled during project entitled

"IDENTIFICATION OF CURRICULUM AND SERVICES NECESSARY TO TRAIN STUDENTS FOR EMERGING MANPOWER NEEDS AND JOB OPPORTUNITIES: A MODEL SYSTEM"

conducted under

Subpart 3 of P.L. 94-482

by

Orange County Department of Education

Judy Scott, Project Director

Nancy McLain, Project Associate

June 1979

CE 022 153

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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PROJECT PURPOSE

The information in this report was developed during research on the project entitled "Identification of Curriculum and Services Necessary to Train Students for New and Emerging Manpower Needs and Job Opportunities: A Model System." The purpose of the project was to develop a system, capable of serving as a statewide model, for defining the vocational education curriculum and services necessary to train students for new and emerging manpower needs and job opportunities.

The method used to develop the system evolved through the actual process of identification of the new and emerging occupations, competencies, resources and services in Orange County. A total of seventeen occupations were identified in the first phase of the project. During the second phase, all but seven failed to meet project criteria and had to be discarded. It is necessary to understand that this project is general in scope, covering a number of occupational areas, and large numbers of representatives of industry and education could not be contacted. The results represent an overview, while other more in-depth research and evaluation is being conducted in California simultaneously in areas such as energy and word processing.

Technology is constantly changing and there are no guarantees that trends will continue as predicted. In most cases the skills required for the new occupations are in demand in existing occupations. An example of this is the competencies required by a solar installer. A well-trained solar installer performs tasks that are necessary for a carpenter, plumber, and a mechanic in the air conditioning, refrigeration and heating trades.

Therefore the skills involved in the occupation of solar installer are transferable to other trades.

The data developed during this project was obtained largely through the interviewing process. Information was first collected from federal, state and local government sources in order to establish trends and to locate key individuals in these "trend areas." Subsequently representatives of industry who are knowledgeable in the areas were contacted and the input of representatives of education was solicited. Persons actually performing the occupational tasks were observed.

This project addresses the needs of women, the handicapped and disadvantaged. Persons of either sex can acquire the competencies and skills required by these occupations. None require tasks of a physical nature that would be gender exclusive. Persons choosing occupations in nontraditional areas, such as men in word processing or women in solar installation, should have the added support and encouragement of peer counseling. The introduction of a role model from the community who is presently performing this work would be an advantage to these students. The project does not address the issues of recruitment and retention, as in-depth research in this area is presently being conducted in the state. It is suggested, however, that lists of resource persons be continually updated in order to represent members of both sexes as they are integrated into the nontraditional fields. One individual should be involved in curriculum development in each occupational area as a consultant on sex equity. A publication is cited in each of the resource sections to highlight the need for addressing the issue.

The disadvantaged and handicapped population is anticipated to become

employable at entry-level status upon completion of training. Whether they are being rehabilitated, retrained, or introduced initially to the world of work, some support system will be necessary. Here again, a role model from the community who has overcome similar barriers is an invaluable asset to training. A mastery of the competencies required for these occupations will help to overcome hesitancy due to real or culturally-induced handicaps and disadvantages. At least one resource person should serve as a consultant to involve the handicapped and disadvantaged population in each occupational area.

The occupations which are included here represent those which have met the project criteria for "new and emerging" and for which there is believed to be no complete curriculum at secondary or post-secondary level. If curriculum does exist, there is enough requirement for enhancement to warrant further curriculum development.

PUBLIC SAFETY ASSISTANT

Orange County is experiencing tremendous growth in population and economy which dictates an increasing requirement for public protective services. This area is no exception in the trend toward the use of paraprofessionals. The rising cost of living and the implications of the tax rebellion impose limitations on the numbers of higher paid professionals that public police departments can afford to employ. By using well-trained assistants and aides to investigate and report low-grade misdemeanor reports, a department can utilize its sworn officers for hazardous and critical police activities such as crime prevention, investigation, and apprehension.

Four public safety assistants have been trained and are employed by the Irvine Police Department, realizing a saving of $200,000 to that department in the current year. Two of these are women. Successful experience in this occupation can lead to further training as Police Officer I.

Candidates are able to obtain training and to gain experience in the area of public safety without facing the more threatening aspects involved in sworn police activity. This insight is especially valuable to women and minorities who may be in the process of examining their strengths and weaknesses.

As the trend to many career changes within a lifetime continues to increase, this paraprofessional occupation permits entry-level evaluation. The entrant can make a decision as to the degree of commitment to public safety and service he or she wishes, based on actual "hands on" life experience.

The candidate for public safety assistant must possess an ability to interface with all kinds of people in a calm and understanding manner. He or she must be resourceful, able to assume authority in a crisis, and able to inspire confidence. A capacity to hold, turn, and pick up objects and the ability to initiate and receive communication are also necessary for those who are operating in the field.

Both men and women are currently employed as public safety assistants. The handicapped person whose mobility is limited may not have the agility and quickness for getting in and out of a police vehicle. However, there are other positions in public safety which can be performed by persons with limited physical abilities. As an example, there is a blind person presently working dispatch in Orange County through the use of Braille equipment. Within the framework and range of public safety assistant most handicaps can be accommodated.

Job Description

The duties of public safety assistant are described as follows:

> Cooperates with, relieves and assists sworn police officers with duties that are noncriminal or nonhazardous. Performs traffic accident investigations. Directs and controls traffic. Compiles written reports. Interfaces with public through community relations.

Competencies

Following are the competencies required of the public safety assistant:

1. Operate police vehicle safely under all conditions.
2. Inspect assigned areas during patrol.
3. Report or remove hazards that endanger public safety.
4. Render first aid to injured.
5. Write and file daily reports.
6. Perform community relations activities and interface with public.

7. Be alert to and report suspicious persons and unusual activities.

8. Prepare accident reports with clarity and organization of thought.

9. Use sentence structure, spell and punctuate correctly.

10. Direct and re-route traffic.

Resources and Acknowledgements

People

Sam Allevato
Senior Police Officer
Planning and Research/Training
Irvine Police Department
17200 Jamboree Road
Irvine, California 92713

Dale Brown Garcia
Irvine Police Department

Fort Lauderdale, Florida Police Department

Scottsdale, Arizona Police Department

Publications

"Orange County Police Officer's Academy," condensed version.

"POST" (Peace Officers Standards and Training), basic course revision.

Wernheimer, Suzanne R. "Sex Equity and Vocational Education," Department of Vocational Education, University of California, Los Angeles.

COUNSELING-RELATED SERVICES

The area of human services, especially the field of counseling and related paraprofessional occupations, is predicted to grow phenomenally in the next twenty years and beyond. The average person who is now in grade school is expected to change occupations four to seven times during the course of a lifetime. A longer life span and shorter working hours are bringing about a greater amount of leisure time. It is projected that between now and 1985 one out of four college graduates--2.7 million of a total of 10 million--will not be able to obtain the type of job college students have traditionally acquired.[1] Lack of job satisfaction will increase the need for individual fulfillment in the leisure area of one's life. Technology is changing rapidly and many people in this technological society feel alienated in family, school, and work. While asking representatives of industry for some of the more technical needs to which education could address itself, a rather surprising response reoccurred. There is a need for life planning for the individual (employee) which would involve all of the elements of a person's life on and off the job. Increasingly, life counseling is becoming a sought-after service. The two specific areas related to career and leisure counseling have been addressed because of their interrelationship and emerging demand.[2]

Career Guidance Technician

The development of career centers which provide information on careers

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[1] "Where Tomorrow's Jobs Will Be," U.S. News and World Report, Nov. 13, 1978.

[2] "Facing Careers in the Year 2000," Counselors Information Service, Sept. 1975.

and career-related services, along with the demand for career counseling, has caused the evolution of the career guidance technician. At present high schools, community colleges, and regional occupational programs are providing the major opportunities for employment. Private industry is also beginning to be a user of this service. In some cases the technician is a direct employee of the company. In other cases, the services are being provided by consulting firms which are beginning to come into existence. The career resource person is also being used by service organizations, including churches, and by state and private rehabilitation programs. Technicians involved in rehabilitation are of great service to the disadvantaged and handicapped population and in this setting serve very strongly in the capacity of a support system, as well as a resource person. Handicapped persons can make a special contribution to this paraprofession. The insight and empathy they have gained through life experience can be invaluable.

The person who chooses to be a career guidance technician will need to relate to people in a concerned, understanding, and tolerant manner. He or she will require an ability to communicate verbally and in written form. Clerical ability and manual dexterity are very helpful, as is the talent to motivate, coach, and inspire students and other clients.

A Career Guidance Technician Undergraduate Certificate Program and a Career Guidance Specialist Graduate Certificate Program are presently offered at California State University at Long Beach. At the community college level, some elements of the competencies required are addressed in existing related curricula in courses offering testing, peer counseling, and library technician preparation.

An integrated curriculum needs to be developed that can train students

in these specific competencies. A condensed and simplified version would also be appropriate for use in training career resource aides at the secondary level. There would be little or no added curriculum necessary to train handicapped persons in this field.

Job Description

The Dictionary of Occupational Titles, 1977 edition, describes the career guidance technician as:

> 249.367-014 CAREER GUIDANCE TECHNICIAN (education) career information specialist; career resource technician.
>
> Collects and organizes occupational data to provide source materials for school career information center, and assists students and teachers to locate and obtain materials: Orders, catalogues, and maintains files on materials relating to job opportunities, careers, technical schools, colleges, scholarships, armed forces, and other programs. Assists students and teachers to locate career information related to students' interests and aptitudes, or demonstrates use of files, shelf collections, and self-administered vocational interest and aptitude tests. Keeps records of students enrolled in work experience program and other vocational programs to assist counseling and guidance staff. Schedules appointments with school counseling and guidance staff for students requiring professional assistance. May make presentations to parent and other groups to publicize activities of career center. May operate audio-visual equipment, such as tape recorders, record players, and film or slide projectors.

Competencies

Following are the competencies required of the career guidance technician:

1. Knowledge of the school system in which the participant is employed.
2. Ability to utilize local career guidance resources and services.
3. Ability to administer standardized tests and utilize the results to assist students in making realistic career choices.
4. Knowledge of preemployment preparation, e.g., licensing, certification, etc.

5. Ability to assist in and/or conduct group guidance activities, e.g., career orientation activities.

6. Ability to make effective use of human relations skills and public relations skills.

7. Ability to assist students, teachers, and parents in locating and understanding guidance resources and career information.

8. Knowledge of career education and career development philosophies.

9. Ability to provide for career needs of special populations, e.g., handicapped, blind, etc.

10. Ability to perform evaluation and needs assessment activities.

11. Knowledge of the variables in career decision making, e.g., values, decision making process.

12. Ability to order, maintain, file, and disseminate career information, and to perform clerical functions to assist counselors.

13. Ability to identify and secure job placements and conduct follow-up studies.

14. Ability to identify and work with potential early school leavers.

15. Ability to recognize stereotypic attitudes affecting career decisions and job placement.

Resources and Acknowledgements

People

Pat Hooper	Orange County Department of Education
Ron Klein	Orange Coast College
Dr. Robert Swan	California State University, Long Beach
Jean Woesner	Huntington Beach High School

Publications

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Wernheimer, Suzanne R. "Sex Equity and Vocational Education," Department of Vocational Education, University of California, Los Angeles.

Associations

National Vocational Guidance Association, 1607 New Hampshire Ave., NW, Washington, D.C. 20009.

Career Guidance Paraprofessional Association, c/o Orange County Department of Education, P.O. Box 11846, Santa Ana, CA 92711.

Leisure Counselor

Leisure counseling is distinguished from career and education counseling as it relates to that portion of a person's life which is not committed to the job or to education. As is pointed out by Bolles in The Three Boxes of Life, there is an increasing trend toward making leisure, career, and education into a lifelong process rather than setting out certain years for each. The entire perspective integrating the three areas would be covered by life planning or life counseling.

Some of the areas in which a leisure counselor may specialize are pre-retirement or geriatrics, or in recreation and rehabilitation services. He or she may be employed by business, industry, community centers, convalescent homes, prisons, hospitals, recreation programs, and pre-retirement or geriatric organizations.

A strong work ethic in the United States has dictated that hours spent in leisure are hours about which to feel a bit guilty. The influence of this work ethic seems to be diminishing, while leisure time is increasing and being perceived and used as a productive and necessary part of life. Leisure means many things to many people. As an example, the leisure industry has grown from $58 billion in 1965 to $160 billion in 1977.[1]

For the persons supporting this industry, leisure represents freedom and fun. For others, it represents nonwork time in which to obtain more education, gain fulfillment not acquired through employment, or even to think in terms of starting a business venture relating to one's avocation. Private industry has entered the leisure field by way of developing

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[1] Klein, Ron and Robert Swan. "Providing Leisure Information in the Career Resource Center, California State University at Long Beach.

recreational clubs and rehabilitation facilities. Participation in such clubs helps individuals overcome some of the feelings of alienation so prevalent in today's society, especially among such groups as recovering alcoholics and drug abusers. More companies are also offering in-house recreational programs to their employees.

Persons who choose the field of leisure counseling will find the following traits useful: interest in people as individuals, desire to help people, ability to communicate and listen, kindness, tact, confidentiality, self confidence, common sense, flexibility, and good memory.

This field is attracting both men and women. Handicapped persons would have little or no limitation in any phase of the work, provided they were able to file information and to communicate effectively with groups and individuals.

Job Description

The duties of Leisure counselor are described as follows:

> Counsels individuals, families, or groups to provide referral to appropriate leisure activities that will benefit client. Interviews, tests, and evaluates individuals to identify interests and aptitudes. Researches and maintains current information on leisure activities. Conducts group counseling sessions and workshops. May work with special groups such as handicapped, geriatrics, or others requiring special services. May be employed by industry, community associations, private clubs, public recreation, government rehabilitation services, or be self employed. May act as a support system to individuals requiring special encouragement and assistance.

Competencies

Following are the competencies required of the leisure counselor:

1. Interview and test clients.
2. Analyze, interpret, and evaluate test results.
3. Organize historical, factual, biographical, professional, and leisure data in a meaningful manner.

4. Refer clients to appropriate leisure activities.

5. Research, collect, file, and maintain up-to-date information on leisure activities.

6. Facilitate group counseling sessions.

7. Conduct workshops.

8. Interface in a one-to-one counseling situation.

9. Understand special needs of groups such as handicapped and senior citizens.

10. Recognize stereotypic attitudes that prevent successful leisure efforts.

11. Recognize and analyze more common "interest types."

12. Communicate effectively in oral and written form.

13. Evaluate and correlate interests of couples and family members.

14. Develop surveys and questionnaires.

15. Develop time study material.

16. Counsel client in developing leisure time.

17. Speak in front of groups.

18. Relate leisure counseling to specific areas of concentration, such as recreation, industry, community, etc.

Resources and Acknowledgements

People

Neil Buell	Coastline College
Patsy B. Edwards	Constructive Leisure, Los Angeles
Ann Emmons	Advanced Health Systems, Center Club Newport Beach
Ron Klein	Orange Coast College
Doug Mitschke	Orange County Department of Education
Edda Wilkinson	University of California, Irvine

Publications

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Werrheimer, Suzanne R. "Sex Equity and Vocational Education," Department of Vocational Education, University of California, Los Angeles.

Associations

American Personnel and Guidance Association
1607 New Hampshire Avenue, N.W.
Washington, D.C. 20009

National Recreation and Parks Association
1601 North Kent Street
Wellington, VA 22209

American Alliance for Health, Physical Education and Recreation
1201 Sixteenth Street, N.W.
Washington, D.C. 20036

OCCUPATIONS IN WORD PROCESSING

More sophisticated and less expensive computers are constantly being designed, developed, and marketed. The cost saving factors have caused many companies, large and small, to switch over to the "automated office." The computer industry itself continues to grow with astounding rapidity.

Word processing is data processing applied to documents. Its use saved one Orange County corporation more than $800,000 in 1977. The demand is here; the technology is here. The expertise to use it is not. Because of the demand for trained personnel in the word processing field, two occupations have been selected in this area.

The opportunity exists to attract men into this new area. Handicapped persons are well suited to these two occupations provided they can sit and concentrate for long periods of time. It has been suggested that specific curriculum for the handicapped could and should be developed, as it would broaden the scope for attracting them. Disadvantaged persons such as displaced homemakers who are facing an age factor can also find easy access to the field.

The individual seeking employment in the field of word processing must be able to accept sitting and concentrating for long periods of time. The job requires manual dexterity, manipulative skills, and vision adequate to see the copy from which you are typing, as well as the CRT screen. There must be a neurological capacity to memorize symbols and to follow written and oral instructions. Mechanical reasoning and the ability to transfer skills to other machines are important, along with a capacity to stress accuracy and preciseness. The librarian qualities of filing, remembering, and accessing are also requisite.

Word Processing/Reprographics Specialist

The first occupation identified is that of word processing/reprographics specialist. This occupation can also utilize students with an interest or background in art, advertising, and business. The job involves word processing as it relates to reprographics and interfaces with photocomposition. More and more corporations are acquiring equipment that has this capability, either in the form of one piece of equipment or in the capacity to use two complementary pieces. Camera-ready copy can now be produced in-house or on-site. Businesses have sprung up which provide this service on the outside, and they also require persons with these skills.

Persons trained as word processing/reprographics specialists are needed in any business where printed material is generated and cost effectiveness can be substantiated. Photocomposition can reduce printing costs by two-thirds. This would include such products as magazines, books, newspapers, advertisements, on-campus brochures, association and church publications, and travel brochures. The California Employment Development Department corroborates that clerical workers, especially in word processing, represent one of the highest demand occupations in Orange County. One instructor states that graduates have chosen from as many as eight jobs.

A number of community colleges have the material and equipment required for training in word processing. A typesetter would need to be acquired. One college found that its typesetter paid for itself on a yearly basis with savings generated through producing the class schedule and course catalogue.

Curriculum exists for the word processing and arts and graphics portion of training requisites for this occupation, but is needed for instruction in the competencies relating to photocomposition. There is also a need to correlate and create an umbrella encompassing the three areas.

Job Description

The duties of the word processing/reprographics specialist are described as:

> Operates word processing-photocomposing equipment in order to produce camera-ready copy for duplication. Prepares records, reports, brochures, schedules, magazines, newspapers, advertisements, and other matter to be printed or published. Types coded inquiry details on keyboard of CRT machine for computer input. Monitors, proofreads, adds, deletes, and corrects data. Loads film, selects type font and adjusts spacing. Places film in developer. Cuts and pastes developed film, using concepts of layout and design, to assemble camera-ready copy. May duplicate copy on reprographic equipment.

Competencies

Following are the competencies required of the word processing/reprographics specialists:

1. Typewrite 60 net words per minute.
2. Proofread documents and discern similarities and differences in copy.
3. Display grammatical skill competency of 85%.
4. Spell 95% of the 5,000 more frequently used words.
5. Punctuate correctly.
6. Use dictionary and Thesaurus effectively.
7. Divide words correctly.
8. Compute basic math problems.
9. Read and understand content of material read.
10. Operate word processing equipment including utilization of the programming function.
11. Use commands and symbol language appropriate to word processing equipment.
*12. Operate phototypesetting equipment.

*Areas which need curriculum enhancement or development.

13. Discern spacing and detail.

*14. Know leadings.

*15. Use commands and symbol language appropriate to phototypesetting equipment.

*16. Keyboard phototypesetting equipment.

17. Monitor CRT screen.

18. Use concept of layout and design with initiative and artistic judgment.

19. Use general knowledge of arts and graphics.

20. Cut and paste.

*21. Distinguish camera-ready copy quality.

Supervisor, Word Processing

The second occupation in the area of word processing is supervisor, word processing. This person would supervise, manage, and may design a word processing center.

Curriculum exists for the word processing specialist but is needed to address industry's needs for supervisory and management personnel in this particular area. Industry also has a stated need for entry-level word processors who are better trained and knowledgeable on up-to-date equipment. The area is overloaded in demand.

*Areas which need curriculum enhancement or development.

Job Description

The Dictionary of Occupational Titles, U.S. Department of Labor, 1977 edition, describes the supervisor, word processing as:

203.137-010 SUPERVISOR, WORD PROCESSING (clerical)
supervisor, communication center

Supervises and coordinates activities of workers engaged in preparing correspondence, records, reports, insurance policies, and similar clerical matter and in operating specialized typing machines, such as magnetictape typewriting and composing machines. (Advises other departmental personnel in techniques and style of dictation and letter writing.) Recommends changes in procedures to effect savings in time, labor, costs, and to improve operating efficiency. Assigns new workers to experienced workers for training. Assists subordinates in resolving problems in nonstandard situations. Evaluates job performance of subordinates and recommends appropriate personnel action. Performs duties as described under SUPERVISOR (clerical).

Competencies

Following are competencies required of the supervisor, word processing:

1. Typewrite 60 net words per minute.
2. Proofread documents and discern similarities and differences in copy.
3. Display grammatical skill competency of 85%.
4. Spell 95% of the 5,000 most frequently used words.
5. Punctuate correctly.
6. Use dictionary and Thesaurus effectively.
7. Divide words correctly.
8. Compute basic math problems.
9. Format business forms, statistical data and communications including reports, memos and letters.
10. Operate word processing equipment including utilization of the programming function.
11. Use commands and symbol language.
12. Transcribe voice recording at a minimum of 40 net words per minute.

13. Use word processing vocabulary.

14. Use correct English grammar.

15. Communicate effectively in oral and written form at all organizational levels.

16. Compile and write reports.

*17. Develop, review, and edit manuals.

18. Supervise employees.

19. Develop work standards.

*20. Schedule workflow.

*21. Recognize and correct workflow problems.

22. Develop, train, and motivate personnel.

23. Interview, promote, evaluate, and terminate employees.

24. Implement work procedures.

25. Conduct meetings

*26. Design a word processing center that will enhance morale and provide effective workflow. Design will include elements dealing with employee relationships, fatigue, psychological stress, and interior space design.

27. Train and provide information and assistance to user departments.

*28. Prepare center's budget based on personnel, equipment, supplies and peripheral needs necessary to handle the workload anticipated from each department.

*29. Monitor spending from each account throughout the year, justifying any monthly over-runs.

*30. Monitor center's progress toward year's goals and objectives.

*31. Evaluate efficiency and cost-effectiveness of the center's equipment mix. Maintain updated analysis of equipment in both input and output phases of word processing.

*Areas which need curriculum enhancement or development.

Resources and Acknowledgements

People

Nancy Rubinstein	Orange Coast College
Roland Alden	Media Plan
Joyce Arnston	Saddleback College
Jeff Krause	Fluor Corporation
Jean Lanning	North Orange County Regional Occupational Program
Lisa Loo	Dynacomp
Wayne Tenant	Orange Coast College
Helen Verrill	State Farm Insurance
Jim West	Coastline Regional Occupational Program
Mary Williams	Irvine Company

Publications

"Command Dictation Manual," International Word Processing Association, Willow Grove, PA.

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Wernheimer, Suzanne R. "Sex Equity and Vocational Education," Department of Vocational Education, University of California, Los Angeles.

Associations

International Word Processing Association, Maryland Road, Willow Grove, PA 19090.

SOLAR INSTALLER

Oil and natural gas are the prime fuels used for producing electricity. There is a serious shortage of gas, and the control of the price of the kind of low sulphur oil permitted to be burned in California is subject to the whims of foreign governments. There has been no miracle substitute developed, and conservation is the only known remedy short of a drastic change in the life style of millions.

A practical potential source which can be tapped to take the load off of natural gas supplies is solar energy. It can provide energy for space heating, water heating, and industrial processes. Monies for business development in the energy field are available through such agencies as the U.S. Small Business Administration. San Diego County is one of the areas which has enacted legislation requiring all new homes to be piped and fitted for solar hot water heating. Tax credits are available. The Three-Mile Island incident has dealt a political blow to nuclear power. The solar industry seems to be coming into its own.

The occupation of solar installer was chosen as this is the person with whom the system begins and is therefore the first in demand. The skills required for a solar installer are much the same as those employed by workers in the heating and air conditioning, plumbing, carpentry, and sheet metal trades. Curriculum, however, does not exist that creates an umbrella for the solar energy installer, technician, or mechanic. Existing curriculum is fragmented and needs to be developed into a broader scope that can deliver the information to those who wish to operate in this specific field.

The occupation of solar installer is open to anyone with a mechanical interest or aptitude. It offers opportunity for women or men. Since women are not heavily involved in the trades yet, it would be well to encourage them to enter and be a part of this new and emerging field. Anyone physically handicapped in a way that prevents freedom of movement may find the design or sales aspects attractive and challenging and would benefit equally from the training.

Job Description

The duties of solar installer are described as:

> Designs, modifies, installs, and repairs solar systems for residential, commercial, and industrial buildings. Sizes, prescribes, and orders equipment appropriate for use in space heating and cooling systems. Drafts blueprints and/or schematics. Sets up installation. Estimates cost of labor and material. Designs duct work requirements. Modifies existing furnace to accept solar apparatus. Uses carpentry, plumbing, heating, and ventilating skills required in actual installing process. Troubleshoots, maintains, and repairs solar heating equipment. May also be known as solar technician or solar mechanic.

Competencies

Following are the competencies required of the solar installer:

1. Read blueprints and/or schematics.
2. Calculate heat loss/gain in building.
3. Size solar collector array.
4. Size water storage sub-systems.
5. Prescribe appropriate automatic solar controls.
6. Draft blueprints and/or schematics.
7. Install and wire solar control systems.
8. Install solar collectors on existing roofs.

9. Cut and join plastic pipe/plumbing.

10. Maintain and repair solar collector array.

11. Maintain and repair solar plumbing.

12. Maintain and repair solar blowers and fans.

13. Troubleshoot, maintain, and repair solar controls.

14. Size or prescribe solar plumbing to include pumps, based on flow rates, friction loss, and other data.

15. Size solar-assisted heat-pump systems.

16. Size auxiliary backup heating systems.

17. Size heat exchanger units.

18. Install prefabricated sheet metal posts.

19. Cut and braze copper pipe/tubing.

20. Install solar collector array or solar furnace at ground level.

21. Maintain and repair solar water pumps.

22. Install water storage sub-systems.

23. Install luring area/space heat exchanger units.

24. Size, build, and install rock storage sub-systems.

25. Size, prescribe and install solar pond or solar wall (thermal mass) systems.

26. Soft-solder electrical wires and connections.

27. Install auxiliary back-up heating systems.

28. Modify existing furnace to accept solar apparatus.

29. Prescribe types of movable insulation and apparatus in passive systems.

30. Cut and/or install glass or plastic glazing in collectors.

31. Sell solar apparatus.

32. Size south-facing window system.

33. Calculate heat loss/gain in storage systems.

34. Install movable insulation and apparatus in passive systems.

35. Modify or relocate existing plumbing and exhaust vents on roof.

36. Design duct work requirements.

37. Install heating ducts and vents.

38. Install solar-assisted heat pumps.

39. Size or prescribe heating ducts, vents, and blowers based on flow rates, friction loss, and other data.

40. Calculate heat loss/gain in plumbing and duct systems.

41. Silver braze copper alloy pipe and sheets.

42. Cut, bend, and fabricate sheet metal parts.

43. Cut, thread, and install galvanized pipe/plumbing.

44. Estimate cost of equipment and material.

45. Perform supervisory functions.

46. Perform administrative functions.

Resources and Acknowledgements

People

Bill Abernathy	Orange Coast College
Paul Bevans	California Solar Energy Industries Assn.
Ken Brunot	Department of Energy, Los Angeles
Robert Fernn	U.S. Small Business Administration, Los Angeles
Rick McClure	California Energy Commission, Sacramento
Dale V. Mykra	Suntappers, Tustin, CA
Werner J. Schmidt	Office of Appropriate Technology, Sacramento
Edda Wilkinson	University of California, Irvine
John Zinner	Mayor's Office, Los Angeles

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"Solar Engineering"
Wernheimer, Suzanne R. "Sex Equity and Vocational Education," Department of Vocational Education, University of California, Los Angeles.

UNIT SUPERVISOR, FAST FOOD SERVICE

There are approximately 350,000 commercial eating places open to the public in the United States. The industry ranks fourth in retail sales. One out of every three dollars expended on food is spent on food served by the food service industry. One out of every three meals is eaten out.[1] In Orange County trends indicate that the 1.7 million population will increase to 2.75 million by the year 2000.[2] Fewer meals are being prepared at home. The growth of the fast food industry seems assured.

Nationally 33.9% of restaurant, cafeteria, and bar managers are women; 9.3% are minorities. This is nearly twice as many as the average in other industries compared. The industry is also considered to be recession-proof.[3]

The person who enters the fast food service industry must be understanding and tolerant of people. The ability to communicate, motivate, and teach is important to those entering management. The capacity to deal with periods of stress and pressure at the busy lunch and dinner periods is mandatory.

The occupation of unit supervisor, or manager candidate, usually represents the management entry-level position and has been chosen for this reason. Some curriculum does exist in the area of fast food service management, however, a representative number of persons in industry and education feel that development of a complete core of curriculum is desirable. It has been suggested that a respected individual from the industry itself would be a good person actually to entrust with these competencies. The training would be designed for (1) persons presently employed in fast food service who are motivated

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[1] Careers in Food Service, National Institute for the Food Service Industry and Heinz U.S.A.

[2] Daily Pilot, November 13, 1978.

[3] Careers in Food Service.

to upgrade their skills, (2) the traditional student who wishes to enter the industry, and (3) the person who is operating or planning to operate his or her own business.

The fast food service industry offers jobs to handicapped, disadvantaged, elderly, and re-entry persons. The entry-level positions although fairly low paying can lead to management possibilities. One fast food service president has stated that hiring the handicapped is "good business" and that he employs "persons with physical deformities, educational handicaps such as lack of English or slight mental retardation."[1] There are a number of educational facilities that have the equipment necessary for adequate training. Suggestions have included: (1) that a central county location be chosen, (2) that in view of the fact that training of seniors is appropriate, senior centers could be utilized, and (3) that classes be conducted in the early morning to attract persons working full time in the industry.

Job Description

The duties of unit supervisor, fast food service are described as follows:

319.137-030* UNIT SUPERVISOR, FAST FOOD SERVICE

Supervises employees engaged in activities of a franchised, chain-owned, or independent fast food establishment. Directs, coordinates, and may participate in preparing, cooking, wrapping, or packaging of food served or taken out of establishment. Coordinates activities involving recruiting, hiring, training, and maintaining records of employees. Maintains cost control and labor efficient scheduling. Orders, arranges delivery, and controls foodstuff inventories. Oversees cleanliness and maintenance of store and equipment. May develop promotional activities in community. (May also be called operator, manager, or assistant manager.)

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[1] "Fast Food Executive Looks Beyond Disabilities," Daily Pilot, Costa Mesa, CA, May 20, 1979.

*Suggested D.O.T. Coding.

Competencies

Following are the competencies required of the unit supervisor, fast food service:

1. Maintain store safety.
2. Maintain cleanliness of store and equipment using most effective methods.
3. Understand government regulations.
4. Interface with people in a concerned and tolerant manner.
5. Recruit, process application, interview, reference check, and hire employees.
6. Orient, train, develop, evaluate, discipline, and terminate employees.
7. Motivate and coach employees.
8. Maintain cost control and labor efficient schedules.
9. Figure mathematic relationship of pay and number of hours to cash profit.
10. Know labor laws.
11. Know policies relating to tax, insurance, and benefits.
12. Order, arrange delivery, receive, and store foodstuffs.
13. Delegate responsibilities for cleaning foods, rotation of stock, raw preparation, final preparation, and arrangement for eye appeal.
14. Post invoices.
15. Figure total costs against sales.
16. Figure daily cash accounting.
17. Change product mixes as necessary.
18. Control eye appeal of menu.
19. Know ingredients and health laws governing handling and storage of food.
20. Know equipment, personnel, and food flow.

Resources and Acknowledgements

William Coulter	Del Taco Corporation, Costa Mesa, CA
Charles Bahr	Carl Karcher Enterprises, Inc., Anaheim, CA
Michael Mooslin	Naugles, Fullerton, CA
Clarice Schickling	Orange Coast College
Judy Scott	Orange County Department of Education

Publications

"Restaurant News," Lebnar-Friedman, Inc., New York, N.Y.

"Heinz Report," National Institute for the Food Service Industry, Chicago, Illinois.

Wernheimer, Suzanne R. "Sex Equity and Vocational Education," Department of Vocational Education, University of California, Los Angeles.

Associations

Southern California Restaurant Association, 448 South Hill, Los Angeles, CA

ADDENDUM

As stated in the introduction, only seven occupations of the original seventeen identified survived the criteria of this project. A particular loss to the balance of the research was in the area of home health care services. These services are needed now and an escalating need is projected. An extensive report was made by the Orange County Health Planning Council entitled "Current Direction in Health and Supportive Services in the Home," December 12, 1978. The continued upward spiraling of hospital costs and an ever increasing number of older citizens are two of the most important factors relating to demand. However, Orange County has experienced a tremendous inflation in rents and property values, and its relative affluence has discouraged many workers in traditionally low paid entry-level positions. Manufacturing feels this pinch in trying to hire workers such as assemblers. Students, also, are aware of the low paying aspects of home health care services and therefore cannot be recruited or retained in the programs. At the present time there seems to be no projected solution to this socio-economic dichotomy.

RESOURCES AND GENERAL ACKNOWLEDGEMENTS

American Electronics Association, Charles Elkind, President.

Coast Community College District, Don Averill.

Coastline Regional Occupational Program, Gloria Plath.

Economic Development Corporation, Bob Savedra.

Employment Development Department, State of California, Employment Data and Research, 1525 South Broadway, Los Angeles, CA 90015.

Jerry Hawbaker, Occupational Research Analyst
Dan Johnson, Occupational Research Analyst
Ed Phillip , Manager, Occupational Analysis Field Center
Jerry Shea, Occupational Research Analyst
Al Schraeder, Occupational Research Analyst
Jack Whistler, Occupational Research Analyst

Employment Development Department, State of California, Employment Data and Research, 28 Civic Center Plaza, Santa Ana, CA 92701.

Alta Yetter, Labor Market Analyst

Futures Research Center, University of Southern California, James O'Toole.

Estancia High School, Costa Mesa, Robert Schureman.

Fountain Valley High School, Work Experience Program, Carl Jednoralski.

Industry Education Council.

National Alliance of Business, Jim Morrison.

National Occupational Information Coordinating Council,
Dr. Russell B. Flauders, Chief.

National Science Foundation, Dr. G.P. Johnson.

North Orange County Regional Occupational Program, Jean Lanning, Coordinator.

Orange Coast College, James Garmon.

Orange County Career Guidance Institute.

Orange County Department of Education

Jim Curley, Staff Services Assistant, Guidance Services
Ron Guyer, Coordinator, Vocational Education

Orange County Personnel Department, Dan Lucas.

Office of Technology Assessment, Congress of the United States, Joseph F. Coates, Senior Associate.

Orange Unified School District

Jack Sappington, Administrator, Special Programs.
Tom Schrodi

Personnel and Industrial Relations Association, Alan Locker.

Rockwell International, Aeronautics Division, Anaheim, Bob McKechnie.

Southern California Council of Vocational Education Administrators.

United States Department of Commerce, Bureau of the Census, Dennis F. Johnston.

United States Department of Commerce, National Telecommunications and Information Administration, John M. Richardson.

United States Department of Energy, Los Angeles, Ken Brunot.

United States Department of Health, Education, and Welfare, Washington, D.C., Kenneth B. Hoyt.

United States Small Business Administration, Robert Fernn.

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